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10/526,983	08/26/2005	Bodo Odendall	21444	6993
7590 09/20/2007				
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		EXAMINER		
		EDWARDS, LOREN C		
		ART UNIT	PAPER NUMBER	
		3748		
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		09/20/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/526,983

Applicant(s)

ODENDALL, BODO

Examiner

Loren C. Edwards

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,10 and 11 is/are rejected.
- 7) ☒ Claim(s) 3-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/7/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/7/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 3/7/05 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has considered the information disclosure statement.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1, 2, 10, and 11 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Bidner et al. (U.S. 6,487,849). Bidner discloses a process for controlling

Art Unit: 3748

the lean operation of an internal combustion engine, provided with a nitrogen oxide storage catalyst (Fig. 1, No. 36; Col. 3, Line 46), the process comprising: performing a first operating phase (lean operation) (Col. 4, Lines 11-47), comprising storing, as a storage phase, nitrogen oxides produced by the internal combustion engine for a specific storage time in the nitrogen oxide storage catalyst, switching to a second operating phase (rich operation) (Col. 4, Lines 11-40), after the storage time expires (Col. 6, Lines 17-23), by a control device as the engine control at a specific switching instant for a specific discharge time as the discharge phase in which the nitrogen oxides which have been stored during the storage time are discharged from the nitrogen oxide storage catalyst, flowing the nitrogen oxide mass upstream of the nitrogen oxide storage catalyst and/or downstream of the nitrogen oxide storage catalyst each being integrated over the same time interval (Col. 4, Lines 47-56), determining a switching operating point in a first process step (Fig. 2B – Step 228), to establish the instant of switching from the storage phase to the discharge phase, at least from the integral value of the nitrogen oxide mass flow upstream and/or downstream of the storage catalyst (Fig. 2B – NOX\_CUR), and comparing the respective switching operating point in a second process step to a definable operating field (Figs. 3A-3C; Col. 6, Line 35 - Col. 7, Line 11) which is optimized with respect to a fuel savings potential as a function of a load acceptance of the internal combustion engine, which is formed by a plurality of individual operating points for one new and one aged storage catalyst (Fig. 3B, FE\_BENEFIT\_MAX and FE\_BENEFIT\_CUR); whereby when a switching operating point is located within an operating field, the engine control enables lean operation (Fig.

Art Unit: 3748

3C, Step 344 - Yes) and thus switching between the storage phase and the discharge phase of the nitrogen oxide storage catalyst, while the engine control conversely dictates lambda operation of the internal combustion engine at which lambda is equal to 1 (Fig. 3C, Step 344 - No; Col. 10, Lines 23-39) for a switching operating point which departs from a definable operating field.

5. With regards to claim 2, Bidner discloses the process of claim 1, as described above, and further comprising spanning the operating field depending on the load by a savings potential boundary curve for a new nitrogen oxide storage catalyst and by a savings potential boundary curve for an aged storage catalyst which represents a boundary ageing state (Fig. 3B, FE\_BENEFIT\_MAX and FE\_BENEFIT\_CUR).

6. With regards to claim 10, Bidner discloses the process of claim 1, as described above, and further wherein the nitrogen oxide mass flow is modeled upstream of the nitrogen oxide storage (Fig. 10).

7. With regards to claim 11, Bidner discloses the process of claim 1, as described above, and further comprising measuring the nitrogen oxide mass flow downstream of the nitrogen oxide storage catalyst by means of a nitrogen oxide sensor (Fig. 1, No. 40).

#### ***Allowable Subject Matter***

8. Claims 3-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Loren C. Edwards whose telephone number is (571) 272-2756. The examiner can normally be reached on M-TH 5:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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